



**U.S. Immigration
and Customs
Enforcement**

ICE Health Service Corps (IHSC)
Enforcement and Removal Operations
U.S. Immigration and Customs Enforcement

IHSC Environmental Health Guide

Approved by: Stewart D. Smith, DHSc

Title: ERO-IHSC Acting AD

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Foreword

This *IHSC Environmental Health Guide* supplements the following IHSC Directive:

IHSC Directive: 05-04, *Environmental Health*.

This Guide explains concepts, assigns responsibilities and details procedures for the implementation of environmental health activities within IHSC-staffed medical clinics.

The intended audience is IHSC health staff supporting health care operations within ICE-owned and contracted detention facilities.

I. Overview

A. Purpose

IHSC is dedicated to promoting a healthy and safe medical clinic environment and ensures that health staff comply with the relevant laws, regulations and standards. IHSC implements activities to reduce the risks from exposure to hazardous substances and equipment, and promotes hygiene and cleanliness with safe work practices in the medical clinic. This Guide provides health staff with the procedures and resources to implement environmental health activities as required by IHSC Directive: 05-04, *Environmental Health*.

B. Responsibilities

Public Health, Safety and Preparedness (PHSP) Unit

Provides technical guidance to medical clinics on environmental health activities.

Annually reviews this Guide and IHSC Directive: 05-04, *Environmental Health*, and updates these documents, as necessary.

Conducts periodic program monitoring.

Develops, reviews and updates tools and resources to assist IHSC staff with implementing environmental health protocols.

Health Services Administrator (HSA)

Oversees the hazardous materials program.

Oversees the hazardous waste program.

Monitors radiation exposures in the medical clinic.

Monitors the cleaning and decontamination of clinical working areas and notifies the facility administrator or designee of any deficiencies.

Maintains availability of documentation of weekly facility food service inspections conducted by facility administration and dietary staff for compliance

Oversees the monitoring and maintenance of airborne infection isolation (All) rooms.

Ensures health staff receive initial orientation and annual training on all environment health-related official guidance.

Ensures that daily, weekly and monthly inspections are documented and maintained locally and submitted to the PHSP Unit or posted on SharePoint, as indicated.

Safety, Infection Prevention and Control (SIPC) Coordinator(s)

Assists the HSA with all environmental health monitoring activities to include hazardous materials and hazardous waste, radiation monitoring, cleaning and decontamination, food service inspections, and All room monitoring. Monitors and reports problems related to environmental health to the HSA.

Health Staff

Complete training and maintain knowledge of the subject matter.
Observe the environmental health requirements specified in official guidance and training.
Comply with all state, federal and local laws governing the disposal of hazardous waste.
Immediately report hazards or hazardous chemical spills to the HSA or designee.
Maintain awareness of what hazardous materials are used and where to find the safety data sheets (SDSs) for those materials.
Wear radiation monitoring devices when conducting radiography services or while in the immediate area where radiography services are conducted.
Promote clinic cleanliness to maintain a healthy hygienic environment.
Wear appropriate personal protective equipment (PPE), as indicated.

C. Abbreviations Used in this Guide

ACH – Air changes per hour

All – Airborne infection isolation

BBP – Bloodborne pathogen

CAS – Chemical Abstract Service

CDC – U.S. Centers for Disease Control and Prevention

CFM – Cubic feet per minute

FDA – U.S. Food and Drug Administration

MREM – Millirem (i.e., one thousandth of a rem)

NIOSH – National Institute for Occupational Safety and Health, CDC

OPIM – Other potentially infectious materials

OSHA – U.S. Occupational Safety and Health Administration

PPE – Personal protective equipment

REM – Roentgen equivalent in man

SDS – Safety data sheet (formerly called material safety data sheet or MSDS)

II. Hazardous Materials and Chemical Safety

The Occupational Safety and Health Administration (OSHA) requires employers to appropriately identify, inventory, label and store hazardous materials, as well as train employees and maintain SDSs on the hazardous materials found in the workplace. The [OSHA Hazard Communication Standard](#) provides details on these requirements. The HSA or designee develops local written procedures describing how health staff meet these requirements and identifies staff responsible for the specific components of the standard. All health staff must adhere to the local procedures.

A. Inventory

The HSA or designee performs an annual survey of the medical clinic and identifies all of the hazardous chemicals that health staff store and use in the medical clinics for inclusion in the inventory. The HSA or designee maintains a current inventory of hazardous chemicals used by health staff in the medical clinic and their storage locations. Each inventory record must be maintained on a separate card or sheet for each substance and must be filed alphabetically. The inventory contains the organization name and location, person who oversees the inventory, chemical name and common name or trade name. The inventory must also include the purchase dates and quantities, use dates and quantities (reflecting the date and quantity of an item when they are removed from the inventory), and the current quantities on hand. OSHA does not require this inventory list to include ordinary office supply items such as copy machine toner, correcting fluid or general purpose cleaners in very small quantities. These OSHA exemptions are based on how the product is used in the workplace, such as the duration, frequency of use and exposure of the product to the employee.

B. Safety Data Sheets

SDSs, formally known as the material safety data sheet (MSDS), are informational sheets available from the manufacturer, distributor or importer, that communicate pertinent information about the chemical in a standardized format. Some of the important sections of an SDS address measures for first aid, fire-fighting, accidental

release, exposure controls, handling and storage. For more information on SDSs refer to the [OSHA Hazard Communication Standard: Safety Data Sheets](#). Health staff must have ready and continuous access to all SDSs for hazardous substances stored and used in the facility, including the medical clinic. The HSA or designee must collect the SDS for each chemical identified in the medical clinic and include it in the inventory. An SDS usually arrives with the shipment of the chemical. Health staff can also locate the SDS on the internet or request it from the manufacturer. The SDSs should be stored together in a file and ordered alphabetically by common name for easy access. The HSA or designee must update the SDS file annually, and upon receipt of new products, to ensure files are kept up-to-date, and is responsible for removing SDSs for products no longer used. The HSA or designee should forward a copy of each file, along with a clinic diagram and legend of their storage location, to the facility administrator or designee. The facility maintenance supervisor should maintain a master index of all hazardous substances and SDSs in the facility and their locations.

C. Storage, Use and Labeling

OSHA requires that hazardous chemicals are stored and used based on instructions in the SDS. Health staff who handle chemicals should be mindful of sections in the SDS that specify how and where to store a product and which products should not be stored together because of the potential for a chemical reaction. Flammable and combustible materials require special care when used and must be stored in a fire-resistant cabinet with a self-closing fire door and either a four-inch sill or a four-inch depressed floor. The cabinet must have a proper ventilation system (mechanical or gravity flow) and must be securely locked at all times. The HSA must ensure that this fire-resistant hazardous material storage cabinet is conspicuously labeled "Flammable – Keep Fire Away." Health staff must store and use hazardous materials according to the manufacturer's instructions found in the SDS. The HSA must ensure that health staff who handle hazardous substances are trained in accordance with OSHA standards, are knowledgeable and follow prescribed precautions, wear PPE and promptly notify the HSA or designee of any hazards or spills.

OSHA specifies that labels on hazardous materials containers cannot be defaced and must be legible, permanently displayed and written in English. The HSA must ensure that all toxic and caustic materials are stored in secure areas, in their original containers, with their labels intact. Health staff must ensure that when chemicals are transferred to an unmarked container for use, that the container is labeled with the product identifier name and written in English; the written product identifier name of the chemical must be identical to how it is written in the SDS.

Health staff must ensure that all hazardous substances are dispensed in single-day increments by authorized staff and must ensure that any unused portions are returned to the storage area at the end of the shift. Health staff must keep the inventory of these hazardous substances current before, during and after each use. The HSA must ensure that all pipes supplying oxygen, analgesic or anesthetic gas sources into the medical clinic are labeled with their contents at the outlet.

D. Non-routine Tasks and Controlled Hazardous Materials

OSHA requires employers to provide information about the chemical hazards and safety measures that should be used when employees perform non-routine tasks. The HSA must ensure that non-routine tasks are identified and that health staff performing those activities are aware of the hazardous chemicals and the required controls to reduce or eliminate the hazard.

Controlled hazardous materials require special treatment and planning before their use; handling requirements are more comprehensive than the information provided on the warning label or within this Guide. OSHA regulations classify these controlled materials according to their type of hazard and nature of restrictions imposed for their safe use. These classifications include: Class I: Industrial Solvents; Class II: Restricted Materials; Class III: Recognized Carcinogens; and Class IV: Suspected Carcinogenic, Teratogenic, and Mutagenic Materials. Refer to the [U.S. Department of Health and Human Services 13th Report on Carcinogens](#) for an updated list of these chemical agents, substances, mixtures and exposures.

E. Training

OSHA requires employee training on methods of detection of hazardous chemical releases, the hazards of the chemicals, protective measures, SDS, storage and labeling. The HSA must ensure that health staff receive this training prior to working with hazardous chemicals, upon the introduction of new chemicals, during their initial orientation and during annual refresher training. This training must be conducted in a language and in a manner that the staff can understand. The HSA or designee must ensure that health staff understand the information on the hazardous chemical label and SDS and are able to refer to them.

III. Radiation

The HSA or designee must monitor radiation exposures whenever there is radiation emitting equipment in a workplace. The HSA must ensure the safe use of radiation-producing equipment in the medical clinic. Radiation exposure must be kept as low as reasonably achievable (ALARA); the maximum whole body dose of occupational radiation

exposures for a health staff member should not exceed 5 rems in any calendar year or 3 rems in any calendar quarter. The HSA must track any occupational exposures exceeding these radiation limits. Health staff that perform radiation-related activities must receive initial and annual refresher training to maintain competency. Health staff should refer to the [OSHA Standards on Ionizing Radiation](#) which govern employee exposure to ionizing radiation.

If health staff notify the HSA of a pregnancy, exposure for the pregnant health staff member must be kept below 500 mrem of radiation exposure during the entire pregnancy. Pregnant federal employees may request a work accommodation from the HSA and/or the Office of Human Capital (OHC). The HSA or designee must advise pregnant contract staff to contact their employer to request similar accommodations.

The HSA or designee must issue a dosimeter badge for radiation monitoring to all health staff that perform radiation-related activities. The HSA must ensure that health staff are trained on the protocol for dosimeter badge use, wear and care.

A. Dosimeter badge use, wear, and care

Health staff must wear dosimeter badges in accordance with manufacturer recommendations, and should wear them only while conducting radiography services, or while in the immediate area where radiography services are conducted, in order to record occupational radiation exposure. Health staff should not wear dosimeter badges during normal clinical duties, while walking outside or while outside of the workplace.

Dosimeter badges have a printed “wear date” on them. Health staff must use the dosimeter with a current wear date. At the end of the wear period, new badges are shipped by the supplier with a current “wear date” and the HSA or designee must return the expired badges to the manufacturer for processing and reading.

A separate dosimeter known as a “control dosimeter” is included with each shipment of dosimeter badges to monitor radiation received in transit or storage. Upon receipt, the HSA or designee must ensure that the control dosimeter is stored away from radiation exposure along with the dosimeter badges included in that particular shipment. The HSA or designee must ensure that dosimeter badges are not stored near a radioactive source or in an x-ray room and that the control dosimeter is not used for any other purpose. The HSA or designee must return the control dosimeter along with the accompanying dosimeter badges with the same “wear date” for processing and reading once they are expired (i.e., past the “wear date”).

B. Responsibilities

The HSA or designee must monitor for radiation outside of radiation exposure areas and ensure that radiation sources are shielded.

In areas of the medical clinic where potential radiation hazards exist, the HSA or designee must post clear and visible radiation signs on doors leading to those exposure areas. Signage must contain the phrase, "Caution, Radiation Hazard" and the radiation symbol.

The HSA must oversee the calibration checks, compliance testing and periodic maintenance of radiation-emitting equipment.

IV. Cleaning and Decontamination

The HSA or designee must ensure that systems are in place for cleaning surfaces and equipment in examination rooms and medical housing unit (MHU) rooms, and for terminal cleaning, in accordance with recommendations from the [Centers for Disease Control and Prevention \(CDC\) 2008 Guideline for Disinfection and Sterilization in Healthcare Facilities](#), [OSHA Standards](#) and [Performance-Based National Detention Standards \(PBNDS\) 2011](#) regarding the frequency, methods, cleansers, detergents, disinfectants and cleaning equipment to maintain a clean, healthy medical clinic.

The HSA or designee must conduct a daily visual inspection of the medical clinic, noting the condition of the floors, walls, horizontal surfaces and equipment, to ensure a high standard of cleanliness. The HSA or designee should communicate with the facility administrator to ensure that general cleaning in the medical clinic is accomplished daily (including weekends) and must notify the facility administrator of any deficiencies in daily general cleaning.

A. Cleaning

Cleaning is the physical removal of organic and inorganic material from objects and surfaces. Cleaning is accomplished with water, detergent and mechanical activity such as scrubbing. After cleaning a surface or object, health staff must inspect to ensure that cleaning has been accomplished.

Health staff must clean surfaces in examination and MHU rooms using an approved germicidal solution for general cleaning.

Terminal cleaning refers to the physical cleaning and disinfecting of all items within a room upon detainee discharge, utilizing an approved hospital germicidal solution. The HSA or designee must establish procedures for

terminal cleaning of the MHU rooms and airborne infection isolation (All) rooms and ensure that health staff are oriented to these procedures. Isolation cleaning refers to the terminal cleaning of an isolation room. In facilities that use detainee staff for cleaning, the following procedures must be accomplished during isolation room cleaning:

- Germicidal solutions are freshly prepared;
- No items used for cleaning in one room are brought into another area;
- Used mop heads and cleaning cloths are laundered after cleaning is complete and before being reused; and
- All linens and waste materials are double bagged.

For facilities that use detainee staff for cleaning, any cleaning procedure issues must be report to the HSA or designee who will notify the facility administrator.

B. Disinfectants

Cleaning must precede disinfection. Disinfection kills or inactivates microorganisms. Disinfectants vary in their efficacy based on the type, activity and level of contamination they are used for. The following are the three levels of disinfectants:

Low: Inactivates some viruses, kills some fungi and kills most vegetative bacteria except tubercle bacilli or bacterial spores. Examples include:

- Phenolic compounds
- Iodophor
- Quaternary ammonium compounds (QUATS)

Intermediate: Kills all vegetative bacteria, some fungi, inactivates most viruses and kills tubercle bacilli. Examples include:

- Ethyl or isopropyl alcohol (70-90%)
- Chlorine compounds

High: Kills vegetative bacteria, inactivates viruses and moderate numbers of bacterial spores. Not meant for environmental surfaces. Examples include:

- Aldehydes (Formaldehyde, Paraformaldehyde, Glutaraldehyde)
- Oxidizers (Hydrogen peroxide, Peroxyacetic acid)

C. Frequency of Cleaning

The HSA or designee must ensure that all patient care areas to include all surfaces touched by detainees or staff, are cleaned at minimum, at the following times:

- At the beginning and end of each shift;
- When the surface, objects or equipment is visibly soiled;
- After each patient encounter;
- Daily in MHU rooms and All rooms; and
- After a detainee is discharged from MHU and All rooms.

Health staff must use appropriate PPE for cleaning patient care areas and medical equipment, or when handling biohazard waste.

D. Decontamination of Medical and Dental Equipment

The decontamination process removes the pathogenic microorganism from an object to allow safe handling or disposal. Health staff must immediately sanitize surfaces and instruments in the medical clinic that become contaminated with blood or other potentially infectious materials (OPIM) using the safety methods and equipment referenced in the SDS for the chemicals used. Decontamination and sterilization (autoclaving) of all applicable medical and dental equipment must be conducted in accordance with applicable local, state and federal regulations and the manufacturer's instructions must also be followed. Refer to the [CDC 2008 Guideline for Disinfection and Sterilization in Healthcare Facilities](#) for additional recommendations on sterilization guidance.

V. Pest Control

Pest control activities fall under the authority of the facility administrator. However, within the medical clinic it is extremely important for health staff to maintain a high level of cleanliness to minimize the potential for pests or vermin, and to remain constantly vigilant for the presence of pests or vermin or their droppings. The HSA must coordinate with facility staff on issues related to pest control. Health staff must notify the HSA if there are signs of pests or vermin (e.g., droppings, gnaw marks, portals of entry) or if there are actual pests or vermin (living or carcasses) in the medical clinic or other health staff work or storage areas.

VI. Hazardous Waste Management

A. Definitions

The primary type of hazardous waste generated in the medical clinic and discussed in this Guide is biohazardous or infectious waste. Biohazardous waste is waste known or suspected of containing pathogens of sufficient virulence or quantity to produce infectious disease in a person coming into contact with the waste which require special handling and disposal precautions (e.g., bulk blood, blood products, bloody body fluids, urine or feces, blood soaked PPE, and medical sharps such as needles or devices).

Another type of hazardous waste is miscellaneous biomedical waste which is not specifically defined as infectious waste. These items are not designated for disposal in the biohazardous waste containers unless they are visibly soiled with blood. Examples include non-specific waste materials such as bandages, dressings, casts, catheters and disposable pads. Other examples of items not designated for disposal in the biohazardous waste containers unless soiled with blood can include examination equipment such as otoscope tips, tongue depressors and examination gloves.

B. Handling Guidelines

The disposal of biohazardous waste is strictly regulated by local county and state laws. The HSA must ensure that health staff receive training on the handling and disposal of biohazardous waste, the use of appropriate PPE, and health and safety hazards before handling, storing or disposing of any biohazardous or infectious waste. The HSA or designee must develop written procedures that specify how biohazardous waste is identified, separated from regular trash, packaged, stored and transported for disposal. These procedures must also provide details on spill clean-up, training and the use of PPE when handling biohazardous waste. The HSA or designee must maintain and implement these procedures to ensure compliance with applicable federal, state and local laws, monitor the program continually and review the program annually.

C. Collection and Disposal

The HSA or designee must ensure that biohazardous or infectious waste, excluding sharps, is segregated from other waste at the point of origin by placing it in red, impermeable biohazardous bags, and must ensure it is handled according to the following requirements:

Biohazardous waste bags should be contained in clearly marked red containers located near non-biomedical solid waste containers for easier segregation of waste.

Biohazardous waste bags must be double-bagged, tied and labeled "Infectious Waste."

The international biological hazard symbol (example below) must be at least six inches in diameter on bags 19" x 14" or larger, and at least one inch in diameter on bags smaller than 19" x 14".

All red bags must be securely tied before removal to the secured biomedical waste room/area and must be transported in a leak-proof container.



Miscellaneous biomedical waste that is visibly soiled with blood must also be double-bagged and tied in a red, impermeable biohazardous bags.

Health staff must dispose of contaminated sharps as soon as possible after use to prevent injury and reduce the risk of infection. Sharps include disposable syringes with needles, lancets, scalpel blades and other sharp items. Health staff must discard sharps in rigid red plastic biohazardous waste sharp containers that are leak-proof, puncture resistant and approved by the National Institute of Safety and Health (NIOSH). Health staff must handle sharps and sharps containers in accordance with the following requirements:

Syringes must be disposed in sharp containers.

Needles should never be bent, recapped or broken before placing them in the container. This includes the prohibition against the removal of contaminated needles from blood tube holders following a blood draw or from medical devices, unless no feasible alternative exists or it is necessary for a specific medical or dental procedure.

Sharps containers must be securely closed with attached lids.

Sharps containers must be secured in key-locked holders located close to the points of use and positioned at least 5 feet above the ground if mounted on the wall.

Sharps containers must be replaced when they are 3/4 full or when the fill line indicated by the manufacturer is reached.

Before disposing of full sharps containers, ensure the containers are securely closed to prevent spilling of their contents.

Health staff must ensure that sharps containers are placed in a red biohazard bag prior to being placed in the large biomedical waste containers awaiting transport, unless the container has already been lined with a large biohazard bag. See [OSHA - Bloodborne pathogens](#) for additional information.

Health staff must transport biomedical waste from areas where it was generated to the secured biomedical waste room/area in the clinic using the most direct route to minimize potential exposure to detainees, staff and visitors. The secured area must be well ventilated and free of pests. Health staff must use standard precautions, such as wearing PPE, when transporting biomedical waste to the secured biomedical waste room/area. Health staff must use care when transporting biomedical waste to avoid rupture of containers. Biomedical waste must remain in the designated secured biomedical waste room/area until it is picked up by the contracted waste hauler. Access to this area must be restricted to designated staff that are trained to handle hazardous waste.

Health staff must prepare red bags containing biohazardous waste or sharps containers for disposal in accordance with the following requirements:

Red bags containing biohazardous waste or sharps containers should be sealed while wearing gloves, and must be double-bagged and hand-tied using a method with a single or gooseneck knot to prevent any leakage. The bags should be placed in an approved outer container prior to removal from the facility.

The outer container should be sealed; if using a corrugated box, seal the top of the box with 2-inch wide clear packing tape; if using an auto-locking box, engage the top flaps; if using reusable containers, secure the lid and engage all closures to lock.

The outer containers should be labeled with the contracted waste hauler's name, address and registration number prior to transport.

The HSA or designee must ensure that a contract is in place with a qualified service provider (i.e., contracted waste hauler) for the removal and disposal of biomedical

waste. The HSA or designee must also ensure that biomedical waste is picked up in a timely manner to prevent the accumulation of hazardous waste in the clinic. The HSA or designee must sign the medical waste tracking form and maintain the yellow copy until the contracted waste hauler mails the white copy which has the signed Certification of Receipt of Waste. The HSA must retain the white, signed copy of the Certification of Receipt of Waste for three years in a manifest folder as part of the clinic's permanent hazardous waste disposal records.

D. Biohazard Infectious Waste Clean-up

Health staff must immediately clean up all spills of biomedical waste in the medical clinic using PPE and following appropriate procedures to prevent the transmission of potentially infectious organisms. The following procedures should be followed:

- Restrict access to the spill area until clean up is complete.

- Dispose of all spill residues, including broken glass, as biomedical waste.

- Liquid spills less than 5 mL or 5 grams should be wiped with absorbent gauze pads.

- Solids should be wiped with wet absorbent gauze pads.

- The spill area should be cleaned at least twice with an approved detergent/disinfectant solution followed by clean water.

- Use the spill clean-up kit for spills greater than 5 mL or 5 grams. Spill clean-up kits may be obtained from commercial sources or may be assembled manually in accordance with directions described in [PBNDs 2011](#).

- Pre-packaged spill kits are stored in all patient care and biohazard collection areas, and at disposal transfer locations.

The HSA or designee must ensure that biohazard training is conducted for all health staff during initial orientation and during annual trainings; this training must cover clean up of biohazard spills and the proper use of spill clean-up kits. The following procedures should be followed when cleaning up biohazard spills:

- Put on PPE.

- Sprinkle absorbent powder over spilled area.

- Remove the material with scoop and scraper.

- Carefully place the material in red biohazard bag and clean remaining solids with absorbent towel.

- Disinfect affected surface area with germicidal wipe or hospital grade disinfectant.

- Place all contaminated materials (including PPE) in biohazardous waste bag.

- Seal and transport the bag to the secured biomedical waste room/area.

Wipe hands with antimicrobial hand wipe.

Health staff must wash hands with soap and water as soon as possible following the clean up of biohazardous material and before completing any further activities.

VII. Food Service Health and Hygiene

A. Mandatory Food Service Inspections

The HSA or designee must ensure that documentation of mandatory weekly food service inspections conducted by facility administration and/or dietary staff are made available to health staff, in order to meet American Correctional Association (ACA) and PBNDS 2011 compliance requirements. Documentation must include weekly inspections of all food service areas including dining, storage, equipment and food preparation areas.

B. Medical Exams and Clearances

Before any detainee is assigned to work in food service operations (i.e., food service duty), a medical provider or registered nurse must conduct a medical exam screening and clearance to evaluate the detainee's general health and check for the presence of lice, open sores, skin infections, diarrhea, illnesses transmissible by food or utensils or any other medical concerns, to ensure the protection of others from any health related harm. A detainee cannot participate in food service duty until this medical exam screening is complete and the detainee is cleared. Once medical clearance is approved, the medical provider or registered nurse must sign the IHSC Food Handler Certificate located in the detainee's electronic health record, and must forward the certificate to the facility staff responsible for food service.

If a detainee does not pass the medical exam screening, the detainee cannot participate in food service duty. However, once the detainee's condition is resolved, a medical provider must re-examine the detainee prior to starting or resuming food service duty. Once medical clearance is approved, health staff must sign the IHSC Food Handler Certificate located in the detainee's electronic health record (eHR), and must forward the certificate to the facility staff responsible for food service.

If a detainee is injured or becomes ill and requires medical treatment due to a work-related kitchen injury or incident, the medical provider or registered nurse should examine the detainee and document the injury or related illness in the detainee's eHR and using the IHSC SharePoint within "Risk Management" of the Medical Quality Management Unit .

VIII. All Rooms

All rooms are designed to keep infectious air from escaping out of the room into other rooms and areas by maintaining negative pressure. The removal effect occurs when air from a room is either discharged outdoors or passed through a HEPA filter to trap the particles before recirculation. Infectious air in the room is quickly exhausted out of the building by a high ventilation rate measured in air changes per hour (ACH).

A. All Room Monitoring

Ongoing assessment is very important to ensure the All room is functioning properly. Some All rooms have an electronic pressure monitor that continuously monitors the room's negative pressure. The room pressure sensor measures the differential pressure between the room and adjacent corridor or anteroom. The sensor or transmitter provides a digital or visual indication of room pressure. Health staff must follow the All room procedures specified below to ensure negative pressure is maintained and operational.

- Keep doors to All rooms closed except when detainees or other providers must enter or exit.

- Conduct daily visual checks of All rooms to supplement electronic monitors and ensure negative pressure is maintained.

- Check All rooms after a loss of power.

- Maintain records of the daily All room negative pressure checks in a log that records both the visual check and the pressure level on the monitor.

- Perform the visual check for negative pressure by holding a tissue strip parallel to the gap between the closed door and the floor from the outside. The tissue will be drawn under the door toward the room by negative air flow. Smoke testing is an option only if permitted at your facility and only if a commercially available smoke-generating kit is used and the manufacturer's instructions for conducting the testing is followed.

B. All Room Clearance

Once a detainee is discharged from an All room, an All room clearance period is required to achieve the removal of >99% of infectious airborne particles, before another detainee can be admitted into the All room. The time needed for this clearance period is based on a formula that incorporates each room's ACH and removal efficiency. If the room's ACH is not known, refer to Figure 1 to determine the ACH. Once the ACH for each room is known, refer to Table 1 to estimate the time necessary to clear the air of *M. tuberculosis* after the detainee leaves the room. During the air clearance time between detainees, health staff must leave the exhaust fans servicing the rooms or enclosures on with doors closed for the removal of airborne particles. Health staff must post a sign outside the door until the clearance period has elapsed to alert staff that a respirator is required for entrance

into an All room that has not fully cleared. Health staff entering the room before the clearance period is complete must wear a fit-tested N95 respirator. Terminal cleaning guidance is referenced above in Section IV: Cleaning and Decontamination.

C. All Room Maintenance

The HSA or designee must arrange for the maintenance of All rooms in accordance with the manufacturer's guidelines. Health staff must fully shut off the system before any maintenance occurs. The HSA or designee must establish protocols to ensure that health staff are notified in advance of any planned maintenance affecting All rooms. If health staff perform maintenance and/or filter replacement on All rooms, they must wear appropriate PPE, such as a respirator and gloves, in accordance with OSHA Standards described in [29 C.F.R. §1910.132](#) and [29 C.F.R. 1910.134](#). Health staff must immediately report suspected problems with the ventilation system in an All room to the HSA.

Figure 1: Airborne Infection Isolation Room Clearance Time Calculation Worksheet

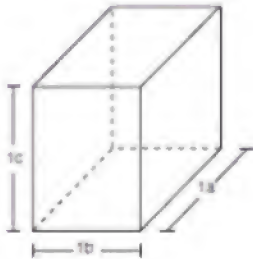
CONVERSION RATE CALCULATION WORKSHEET		
Room or Booth # _____		
1. Calculate Room Volume		
	1a. Room Length	1a. _____ ft
	1b. Room Width	1b. _____ ft
	1c. Room Height	1c. _____ ft
	1d. $1a \times 1b \times 1c = \text{volume}$	1d. _____ ft ³
2. Calculate Air Changes Per Hour (ACH)		
2a. Measured exhaust airflow rate	2a. _____ CFM	
2b. $= 2a \times 60 \text{ minutes}$	2b. _____ ft ³ per hr	
2c. $= 2b \div 1d$	2c. _____ ACH	
3. Calculate Room Clearance Time		
3a. Find the Uncorrected Clearance Time		3a. _____ min.
<p>Using Table 1 of the CDC Guidelines (see next page), follow the first column down until the ACH value on line 2c is found. A removal efficiency of >99% is preferred; for 99% efficiency follow this row horizontally to the second column, ideally the value in the third column (99.9% removal efficiency) should be used. Record this value (the number of minutes).</p> <p>This is the amount of time that should elapse before staff or other patients enter a sputum induction area (booth, hood, or room) after sputum has been induced on a person with suspected or known infectious TB and the patient has left. Table 2 of the CDC Guidelines should be consulted to ensure that your calculated ACH is appropriate for the type of setting you are working in.</p>		

TABLE 1. Air changes per hour (ACH) and time required for removal efficiencies of 99% and 99.9% of airborne contaminants*

ACH	Minutes required for removal efficiency†	
	99%	99.9%
2	138	207
4	69	104
6	46	69
12	23	35
15	18	28
20	14	21
50	6	8
400	<1	1

* This table can be used to estimate the time necessary to clear the air of airborne *Mycobacterium tuberculosis* after the source patient leaves the area or when aerosol-producing procedures are complete.

† Time in minutes to reduce the airborne concentration by 99% or 99.9%.

Source: [CDC Guidelines for Preventing the Transmission of *Mycobacterium tuberculosis* in Health-Care Settings, 2005](#), page 20.

IX. Construction, Renovation and Repair Work

The medical clinic's Safety, Infection Prevention and Control (SIPC) Program may be compromised during construction and renovation projects within the facility. These projects or repair activities may disrupt engineering controls in place within the medical clinic, such as All rooms, and may introduce new sources of infection or result in failures of systems that control existing sources of infectious diseases. Additional precautions or changes in work practices may be necessary during these temporary projects. The HSA or designee must coordinate with facility staff to ensure that new construction or remodeling activities within medical clinic facilities comply with the appropriate provisions of the National Fire Protection Association (NFPA) 101 Life Safety Code (LSC), 2015 Edition, and the Americans with Disabilities Act Guide. See the [Americans with Disabilities Act](#) for additional information.

The HSA or designee must coordinate with facility staff before and during construction or repair work to prepare for and implement additional precautions if the medical clinic environment will be impacted. Health staff must immediately report any workplace hazards identified during construction, renovation or repair work projects to the HSA or designee to ensure a safe and hazard-free environment. Upon the onset and throughout the duration of these projects, the HSA or designee must monitor lighting, heating, air conditioning, ventilation, plumbing, water and power to ensure they accommodate clinical activities and must arrange for temporary accommodations when necessary.

X. Clinic Inspections

The HSA or designee must perform a monthly health and safety assessment of the medical clinic. The purpose of the inspection is to identify health and safety deficiencies or areas of concern that need corrective action. The HSA or designee should use a template as a way to evaluate these health and safety observations addressing all deficiencies and documenting the corrective action(s) taken.

XI. Orientation and Training

Training is extremely important to the success of the environmental health activities discussed in this Guide. Training for environmental health must be included in orientation and annual training requirements for all facility IHSC staff. Documentation of training completion must be entered into the personnel training record for each attendee and must include date of completion. Standardized national training materials, including a content summary and version date, must be centrally located and accessible by all IHSC staff. The HSA or designee is responsible for compliance with training requirements and training documentation. The HSA may maintain a master training document for monitoring and reporting purposes; however, PII is not authorized on the master document.

XII. Program Monitoring and Evaluation

PHSP Unit staff periodically collect information from the HSA or designee to assess the implementation of environmental health activities.

XIII. Privacy and Recordkeeping

Please refer to IHSC Directive: 05-04, *Environmental Health*, for guidance on complying with privacy and recordkeeping procedures.

XIV. Glossary

Administrative Controls – Methods of controlling employee exposures through the enforcement of policies and procedures, modification of work assignment, training in specific work practices, and other administrative measures designed to reduce exposures.

Bloodborne Pathogens – Pathogenic microorganisms that are present in human blood and can cause disease in humans (e.g., hepatitis B virus and human immunodeficiency virus (HIV)).

Body Fluid – Fluid secreted by the body including, but not limited to, blood, semen, saliva, urine and feces.

CAS Number – The unique registry number for each chemical that allows for efficient searching across databases of hazardous materials.

Disinfection – A process of killing (inactivating) most or nearly all microorganisms by various agents such as chemicals, heat, ultraviolet light, ultrasonic waves or radiation.

Exposure – The condition of being subjected to something in the working environment (noise, dust, chemicals, radiation, infectious agents) that could have an adverse health effect.

Ionizing Radiation – A type of radiation that is capable of stripping electrons from atoms and breaks the chemical bonds, creating highly reactive ions. Ionizing radiation includes alpha rays, beta rays, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons and other atomic particles.

Isolation Room Cleaning – The thorough, extensive terminal cleaning and disinfection of an isolation room after the detainee is discharged.

Millirem (mrem) – A unit used to measure a dose of ionizing radiation on the human body which is one thousandth of a rem. The mrem is often used for the radiation dosage measure received from medical x-rays and background sources.

N95 Respirator – An air-purifying, filtering-facepiece respirator that is $\geq 95\%$ efficient at removing 0.3 μm particles and is not resistant to oil; worn to protect the wearer from exposures in the air; not to be worn by a patient.

Other Potentially Infectious Materials (OPIM) – Includes 1) semen, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, peritoneal fluid, amniotic fluid, saliva in dental procedures, any body fluid that is visibly contaminated with blood, and all body fluids in situations where it is difficult or impossible to differentiate between body fluids; 2) unfixed tissue or organ (other than intact skin) from a human (living or dead); 3) HIV-containing cell or tissue cultures, organ cultures, and HIV or HBV-containing culture medium or other solutions; and 4) blood, organs, or other tissues from experimental animals infected with HIV or HBV.

Rem – A measure of a dose of ionizing radiation to body tissue in terms of the energy absorbed per unit of mass of the tissue.

Personal Protective Equipment (PPE) – Equipment that protects a person from hazardous exposures such as chemicals, dust, noise, radiation and infectious diseases, and includes respirators, gloves, mask, goggles, gowns, face shields, ear plugs, hard hats and steel toe boots.

Respirator – A form of personal protective equipment with filtering capability that fits snug on the face over the nose and mouth to prevent the wearer from inhaling hazardous airborne particles.

Surgical Mask – A protective device that covers the patient's nose and mouth to protect health care workers from exposures to wearer-generated microorganisms.

Terminal Cleaning – The thorough physical cleaning and disinfecting of all items within a room after a detainee is discharged, in order to remove germs utilizing an approved hospital germicidal solution.

Work Practice Controls – Controls that reduce the likelihood of exposure by altering the manner in which a task is performed (e.g., prohibiting recapping of needles by a two-handed technique).

XV. References and Resources

- 1) [ICE Performance-Based National Detention Standards 2011.](#)
- 2) [Guidelines for Environmental Infection Control in Health-Care Facilities: Recommendations of CDC and the Healthcare Infection Control Practices Advisory Committee.](#)
- 3) [ICE Family Residential Standards.](#)
- 4) [National Institute for Occupational Safety and Health \(NIOSH\).](#)
- 5) [Occupational Safety and Health Administration \(OSHA\) Hazard Communication: Small Entity Compliance Guide for Employers That Use Hazardous Chemicals.](#)
- 6) [Occupational Safety & Health Administration \(OSHA\) Injury and Illness Recordkeeping and Reporting Requirements.](#)
- 7) [Occupational Safety and Health Standards Bloodborne Pathogens.](#)